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Mass media interventions for reducing mental health-related stigma (Protocol)

Clement S, Lassman F, Barley E, Evans-Lacko S, Williams P, Pagdin R, Slade M, Rüsch N, Yamaguchi S, Thornicroft G



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[Intervention Protocol]

Mass media interventions for reducing mental health-related stigma

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ABSTRACT

This is the protocol for a review and there is no abstract. The objectives are as follows:

The primary objective is to assess the effects of mass media interventions on reducing stigma related to mental health in terms of discrimination and prejudice compared to inactive controls. The secondary objective is to make comparisons of effectiveness based on the nature of the intervention, the type of the intervention, and the type of media.

BACKGROUND

Description of the condition

Stigma has been defined and conceptualised in a number of different ways. The conceptual framework used in this review is that stigma comprises ignorance (lack of knowledge), prejudice (stigmatising attitudes) and discrimination (the behavioural enactment of prejudice) (Thornicroft 2007). Our review focuses on the latter two concepts: prejudice and discrimination, with knowledge as a secondary outcome. This is because what constitutes de-stigmatising knowledge is a contested issue and because prejudice and discrimination are central to most conceptualisations of stigma. Prejudice and discrimination are relevant concepts for this review because they focus on stigmatisers (the targets of the mass media interventions reviewed here) rather than stigmatised people. Some commentators focus on aspects of prejudice, viewing stigma as a social process of 'othering', blaming and shaming (Deacon 2006), whereas others have argued for a purely discrimination-based conceptual framework (Sayce 1998). Phelan and colleagues have investigated the possible similarity between the concepts of stigma and prejudice, and concluded that the two models have much in common, with most differences being a matter of focus and emphasis (Phelan 2008). Prejudice and discrimination are key elements in Rüsch's revision of Link's (Link 2001a) conceptualisation of the stigma process as labelling, separation, stereotype awareness, stereotype endorsement, prejudice, and discrimination in a context in which social, economic, or political power is exercised (Rusch 2005). Prejudice and discrimination are also core elements in Corrigan's framework (Corrigan 2005). In this review, in line with the Thornicroft 2007 model, the term 'prejudice' is used to encompass concepts such as attitudes towards, stereotypes about, emotional reactions to, and desire for social distance from, people with mental ill health. Following the same model, the term 'discrimination' is used to refer to behavioural elements such as observed discriminatory behaviour and discrimination experiences reported by people with mental health problems, although we recognise that discrimination can also operate at the structural level, for example in discriminatory media reporting, policy and legislation (Corrigan 2004c).

Mental health-related stigma is widespread. A recent survey of public reactions to case descriptions of people with schizophrenia and major depression, involving nationally representative samples in 15 countries in Africa, Asia, Australasia, Europe, and North and South America, found significant levels of public stigma in all countries studied, although there was some variation between the different countries (Pescosolido 2009). A US study using the same methodology found that in 2006, 62% of the public reported being unwilling to work closely with people with schizophrenia, and 52% were unwilling to socialise with them (Pescosolido 2010). The figures for depression were 47% and 30% respectively (Pescosolido 2010). Furthermore, some studies have reported a worsening of certain attitudes in recent years (Angermeyer 2005;

Mehta 2009). A 2009 study investigating the discrimination experiences of 739 people with schizophrenia in 27 countries, found that negative discrimination was experienced by 47% in making or keeping friends, by 43% from family members, by 29% in finding a job, 29% in keeping a job, and by 27% in intimate or sexual relationships (Thornicroft 2009). Stigma can be compounded by other axes of difference. For example people with mental ill health who belong to other groups facing stigma and discrimination, such as those from black and ethnic minority groups, lesbian and gay individuals, and asylum seekers, may be particularly disadvantaged (e.g. Gary 2005). Furthermore, both mental ill health itself and mental health-related prejudice and discrimination can make people more likely to become members of other groups subject to stigma, such as those experiencing homelessness, unemployment and poverty.

Stigma has major adverse effects on the lives of people with mental health problems (McDaid 2008). Public attitudes commonly include stereotypes of incompetence, beliefs about dangerousness, attributions of blame, expectations of poor prognosis, negative emotional responses, and a desire for social distance (Hinshaw 2000). Each of these can directly affect the well-being and quality of life of people with mental ill health. People with mental health problems experience significant discrimination which spans all major domains of life (Thornicroft 2006; Thornicroft 2009) and includes exclusion from employment (Stuart 2006) with consequent poverty, negative impacts on intimate relationships and parenting (Hinshaw 2005), reduced access to and engagement with mental health services (Corrigan 2004b), and poorer physical health care (Jones 2008). Prejudice and discrimination can also have significant negative effects on the way that people with mental ill health feel about themselves, such as inducing internalised stigma (Corrigan 2002; Ritsher 2003). In addition, the anticipation of discrimination can lead people to use strategies of avoidance and concealment, which may further contribute to social exclusion and poor quality of life (Thornicroft 2009). Mental health-related stigma also affects families and others close to the person with mental ill health, and these people can experience 'courtesy stigma' or 'stigma by association' (Corrigan 2004a). In addition stigma has damaging effects at the societal level, robbing the community of the contributions that people with mental ill health could make were it not for stigma, and helping to maintain fear about mental illness (Corrigan 2005). Negative media reporting - a form of discrimination in itself - also shapes attitudes and influences behaviour, thereby producing or reinforcing stigma (Wahl 1995).

Description of the intervention

Mass media has the potential to de-stigmatise as well as to stigmatise (Philo 2010). This review focuses on mass media interventions, rather than on other types of intervention, because such interventions are able to reach large numbers of people and so have

the potential for achieving population-level change. Large scale change may be difficult with other types of intervention.

Following [Bala 2008](#) and [Brinn 2010](#), we define mass media as channels of communication intended to reach large numbers, which are not dependent on person-to-person contact. A mass media intervention is one that uses such channels.

There are many different forms of mass media, for example: print (e.g. newspapers, magazines, billboards, pamphlets, flyers, coasters); recordings (e.g. audio cassettes, videos, CDs, DVDs); radio; television; cinema; mobile phones (e.g. mobile device applications); and the Internet (e.g. websites, blogs, podcasts, viral messaging, social networking sites) ([Donovan 2003](#)).

Not all mass media interventions that may reduce stigma have an explicit intention to do so. Examples may include the positive portrayal of a person with a mental illness on television without a planned intention, or media coverage of a celebrity's diagnosis with a mental illness. Some health promotion campaigns may also reduce stigma, even though this is not their primary purpose.

Interventions vary in the extent to which they target particular groups. Some are directed at the general population and some are targeted at specific groups, for example young people or employers. Mass media interventions may come from various sources, including governments, community groups and organisations. An intervention may focus on stigma in relation to mental health in general, a specific mental health condition, or all forms of disability including mental health disabilities. Interventions may be based, implicitly or explicitly, on diverse conceptualisations of stigma or mental health, and may use different theories to underpin the design of the interventions (see [How the intervention might work](#)). Interventions sometimes take place at a single time point, or may be short-term or sustained over a long period. Furthermore they vary in intensity (e.g. extent and frequency of advertising) and reach (e.g. proportion of intended population who see the advertisements).

How the intervention might work

In many respects, mass media interventions to combat stigma work using the same mechanisms operating in advertising and marketing. When these techniques are applied to address social issues rather than to sell commercial products or to promote a particular organisation, this is referred to as social marketing ([Donovan 2003](#)). However, it is recognised that social and commercial marketing differ in significant ways, most markedly in that the attitudes and behaviours which social marketing seeks to change are often more complex and hence more challenging to change than commercial behaviour ([Donovan 2003](#)).

Social marketing draws on several models of communication and persuasion, and uses various behaviour change theories. A number of these derive from, or overlap with, those from the health psychology, social psychology, public health or health promotion fields. Some of the major theories include: the theory of rea-

soned action; the health belief model; the transtheoretical (stages of change) model; the theory of planned behavior; social learning theory; the Rossiter-Percy motivational model; the diffusion theory model; and the elaboration likelihood model ([Donovan 2003](#); [Noar 2006](#)). Symbolic communication and modelling are also processes thought to be important in mass media interventions ([Bandura 2001](#)). The mass media operates by potentially influencing not only individuals but also communities and policy makers ([Andreasen 2006](#)).

It is not uncommon for mass media material to contain some form of personal narrative from people who have experienced mental health problems, such as celebrities, members of the public or actors sharing stories about themselves and their lives. These may reduce stigma because they are an indirect form of social / interpersonal contact with people with mental health problems, and this form of contact has been theorised, and demonstrated, to reduce stigma ([Couture 2003](#); [Pettigrew 2006](#)). Such narratives may also reduce stigma by increasing awareness of the variation amongst members of out-groups and in-groups, increasing social identity complexity, and increasing tolerance ([Schmid 2009](#)). Alternatively narratives may act as 'mediated associations' in which an individual feels empathy towards the suffering of another without the other's physical presence, elicited through language (stories, films) or pictorial representation (e.g. photographs), with this empathy then being translated into a commitment to social justice ([Kumagai 2008](#)).

Our conceptualisation of stigma as comprising prejudice and discrimination does not necessarily imply a linear mode of action with changes in prejudice leading to changes in discrimination. For example, a communication which imparts the message that it is unlawful to discriminate on the basis of mental health could change behaviour (discrimination) outcomes without necessarily changing attitudes (prejudice). It is also recognised that changes in attitudes may not necessarily translate into changes in behaviour ([Marcus 1998](#)).

Many variables are believed to influence the effectiveness of mass media interventions, including whether an intervention is based on formative research; whether it has a theoretical basis; the degree of targeting; campaign intensity; the media channel ([Noar 2006](#)); and the 'ad creative' (the creative design and content of the intervention). In addition, whether the mass media element is part of a multi-faceted campaign ([Link 2001b](#)) and which particular messages are conveyed ([Clement 2010](#)) are likely to be important. Reviews of mass media interventions in other fields have reported that the duration of campaigns appears to be important, with campaigns of longer duration being more effective (e.g. [Friend 2002](#)). Furthermore, interventions that are effective in reducing stigma in high-income countries may not necessarily be effective if exported without modification to low- or middle-income countries ([Rosen 2003](#)) for reasons relating to both available resources and culture. Within one country an anti-stigma intervention may be received differently by different ethnic groups ([Glasgow Anti Stigma](#)

[Partnership 2007](#)). We have taken many of these variables into consideration in planning the comparisons and subgroup analyses to be undertaken, as well as the data extraction plan for this review.

Why it is important to do this review

Stigma is highly prevalent and has serious adverse effects on the lives of people with mental ill health (as described above). Consequently there is a need to find effective ways to reduce mental health-related stigma. Mass media interventions are one of the most commonly used types of intervention, and they are being carried out throughout the world ([Sartorius 2005](#); [Callard 2008](#)). National programmes aiming to reduce mental health-related stigma and containing mass media components are taking place in a number of countries, such as New Zealand ([Vaughn 2004](#)), England ([Henderson 2009](#)) and Scotland ([Dunion 2005](#)). Local and regional interventions are also widespread. Mass media interventions can be scaled-up with relative ease to the population-level and hence, if effective, are a feasible intervention for large-scale change. If mass media interventions were to produce only a small magnitude of change, this may translate into important impacts at the population level ([Noar 2006](#)). Although other types of interventions, such as direct social contact ([Couture 2003](#)), have occasionally been used on a large scale ([Corrigan 2006](#)), this is unusual and presents greater implementation challenges than mass media approaches.

There is a recognised evidence gap in this field ([Weiss 2006](#); [Callard 2008](#)). A systematic review will synthesise what is currently known and enable future research to be appropriately focused. Such systematic investigation will provide guidance for those who are planning initiatives, about whether mass media interventions are worthwhile; about optimal interventions design; and about any possible harm. As mass media interventions may be expensive ([Austin 1998](#)), evidence of ineffectiveness will free anti-stigma resources for other approaches.

A number of non-systematic reviews of mass media and other interventions to reduce mental health-related stigma have been undertaken, (for example [Warner 2001](#); [Pinfold 2005](#); [Rusch 2005](#); [Sartorius 2005](#); [Warner 2005](#); [Callard 2008](#); [Hinshaw 2008](#); [McDaid 2008](#); [Thornicroft 2008](#)). Recently three systematic reviews of interventions to reduce mental health-related stigma have been conducted, however none focuses on mass media interventions ([Holzinger 2008](#); [Schachter 2008](#); [Yamaguchi 2011](#)). Our review will add to the growing body of systematic review evidence about the effectiveness of mass media interventions in other fields ([Vidanapathirana 2005](#); [Grilli 2002](#); [Bala 2008](#); [Brinn 2010](#)). The systematic review of mass media anti-stigma interventions in mental health is likely to create a greater understanding of this vital area, and help to underpin the development of future population-level interventions to combat mental health-related stigma.

OBJECTIVES

The primary objective is to assess the effects of mass media interventions on reducing stigma related to mental health in terms of discrimination and prejudice compared to inactive controls. The secondary objective is to make comparisons of effectiveness based on the nature of the intervention, the type of the intervention, and the type of media.

METHODS

Criteria for considering studies for this review

Types of studies

Two types of study are eligible: randomised controlled trials (RCTs), including cluster trials; and interrupted time series (ITS) analyses. In ITS studies the intervention will be required to have a defined start and end point, and at least three data points before the intervention was introduced and at least three after its end point

RCTs were selected as these provide the strongest level of evidence on effectiveness. ITS analyses are included because this study design is commonly used to assess the effectiveness of mass media interventions ([Grilli 2002](#); [Vidanapathirana 2005](#)). The specific criteria for ITS studies are based on Cochrane Consumers and Communication Review Group (CCCRG) study design guidance ([Ryan 2009](#)) which advocates using the criteria proposed by the Cochrane Effective Practice and Organisation of Care Review Group (EPOC) ([EPOC undated](#)) to minimise bias.

Types of participants

Participants will be members of the general public or any of its constituent groups (e.g. occupational or socio-demographic groups or any other target group), including children. Studies in which the whole sample are people with mental health problems are excluded. This is because a separate Cochrane review addressing this topic is registered with the Cochrane Schizophrenia Review Group.

Types of interventions

An intervention will be included if it meets all of the following criteria:

1. It is a mass media intervention, defined as an intervention that uses a channel of communication intended to reach large numbers, and is not dependent on person-to-person contact. Such channels include newspapers, billboards, pamphlets, DVDs, television, radio, cinema, some web and mobile phone-based media, street art and ambient media. Interventions may be

undertaken at international, national, regional or local level. Studies that use mass media interventions on a small scale in experimental contexts will also be eligible for inclusion, as it is the nature of the intervention and its potential for scaling-up that is the requisite factor. The mass media component(s) must be substantial, in that it comprises more than 50% of the total intervention (e.g. in terms of time). Interventions with non-mass media components are eligible, as long as this criterion is met. The mass media intervention may use one, two or more types of mass media.

2. An intervention may take place at a single time point, may be short-term or sustained over a long period.

3. The content of the intervention may take any form including: factual material, fiction, persuasive material, personal narratives, slogans, symbols, images, quizzes and games.

4. Mental health is the subject (or one of the subjects) of the intervention. For the purposes of this review, mental health includes all conditions listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) (APA 2000), including developmental disorders, dementia, learning disability and substance abuse. Interventions that do not specify a particular condition will also be eligible, e.g. interventions referring to psychological or emotional problems, mental well-being, etc. Interventions that are not exclusive to mental health, but encompass it, such as disability interventions, will be eligible as long as outcomes are reported that relate specifically to people with mental ill health.

5. The comparator will be an inactive control i.e. the control group will either receive an intervention with no messages or other content likely to reduce mental health-related stigma, or will receive no intervention.

There is no requirement for an intervention to have any intention to reduce stigma. However, media reports of violent acts committed by people with mental ill health will be excluded as these have no potential to reduce stigma. Clinical mental health education interventions directed at health or social care professionals will also be excluded.

Types of outcome measures

Studies will not be excluded for failing to use validated outcome measures. However, any validation of outcome measures will be reported.

The Main outcomes (to be reported in the Summary of Findings table) are: discrimination towards people with mental ill health; prejudice towards people with mental ill health, cost; and unforeseen adverse effects.

Primary outcomes

Primary outcomes reflect our conceptualisation of stigma (Thornicroft 2007) and our focus on two of its three elements:

prejudice and discrimination. Under each of these two broad categories there are a number of different outcomes, as specified below.

To be eligible for inclusion, a study must include at least one of the discrimination or prejudice outcome measures.

1. Discrimination towards people with mental ill health, including reports of discrimination personally experienced by people with mental ill health; observed discriminatory behaviour towards people with mental ill health, such as avoidance and negative interaction observed in experimental settings; and reported intended behavioural discrimination towards people with mental ill health.

2. Prejudice towards people with mental ill health, including attitudes towards people with mental ill health; stereotyping of people with mental ill health; desire for social distance from people with mental ill health; emotional responses towards people with mental ill health; empathy for people with mental ill health; and implicit associations regarding people with mental ill health.

Secondary outcomes

The secondary outcomes are:

- knowledge (any type);
- cost of the mass media and comparator interventions (cost charged, or cost incurred if cost charged data is unavailable, in GBP);
- reach, recall, and awareness of intervention(s);
- duration / sustainability of media effects;
- audience reactions to media content (generally and by specific groups within sample e.g. favourability and information / message communicated); and
- unforeseen adverse effects (other than increases in discrimination and prejudice).

Search methods for identification of studies

Electronic searches

We will search eleven electronic databases, each from its earliest date.

- Cochrane Central Register of Controlled Trials (CENTRAL, *The Cochrane Library*) (1948 to present)
- MEDLINE (OvidSP), 1966 to present
- EMBASE (OvidSP), 1947 to present
- PsycINFO (OvidSP), 1806 to present
- CINAHL (EBSCOhost) (nursing and allied health database) 1981 to present
- ERIC (CSA) (educational database), 1966 to present
- Social Science Citation Index (ISI), 1956 to present
- OpenSIGLE (<http://www.opengrey.eu/>) (grey literature), 1980 to 2005

- Worldcat Dissertations and Theses (OCLC), 1978 to present
- metaRegister of Controlled Trials (http://www.controlled-trials.com/mrct/mrct_about.asp), 1973 to present
- Ichushi (Japanese medical database) (OCLC), 1903 to present

A MEDLINE search strategy based on the above has been developed in collaboration with the CCCRGs information specialist and appears in [Appendix 1](#). The MEDLINE search will be tailored to the other databases. There will be no language restrictions.

Searching other resources

Other search methods include: searching abstracts of World Psychiatric Association Stigma Conferences; reference checking of included studies and reviews; personal communication with experts in the field, including stigma researchers and media scientists; websites of governmental and non-governmental organisations known to be running anti-stigma campaigns in mental health; and citation forward checking from included studies using the Science Citation Index and the Social Science Citation Index via the Web of Science database.

Data collection and analysis

Selection of studies

If less than 5000 items are found in the database searches after removal of duplicates, two authors will independently undertake initial screening of titles and abstracts to decide which full papers should be obtained. If 5000 or more items are located, two authors will independently screen the initial 20% of items. If the agreement whether to exclude studies between the two authors on the 20% sample is 95% or greater, one author will screen the remainder. If the agreement is less than 95% both authors will screen the remaining 80% of items found in the electronic searches. Full papers will be ordered for all items identified as potentially relevant by at least one author. Full papers will also be ordered where there is insufficient information from the title and / or abstract to indicate possible relevance.

Two authors will independently consider whether each full paper obtained meets the inclusion criteria, with disparities in inclusion decisions being resolved through discussion, and with arbitration by a third author where necessary. Review authors will not contribute to inclusion decisions regarding studies they have been involved in.

Data extraction and management

We will use Endnote to store and manage all located studies. We will extract data into data extraction tables, based on the CCCRG

Data Extraction Template. The table format will be piloted before use. The draft format is as follows:

Methodological details of study: aim of study; study design; details of cluster RCTs (number of clusters, size of each cluster, description of the clusters and the intraclass correlation coefficient); details of ITS studies (number of time points, the length of time between points, the exact dates and duration of the intervention and the method of statistical analysis used); methods of recruiting participants; inclusion/exclusion criteria for participation; funding; statistical methods; power calculation; and consumer involvement in study design or intervention.

Assessment of risk of bias: Using standard tools (as detailed at [Assessment of risk of bias in included studies](#)).

Participants: description of sample measured; geographic location; setting; number; age; gender; ethnicity; and income level of participants' country (World Bank Index A, B or C).

Details of intervention: aim of intervention; content of intervention; type(s) of mass media used; number of mass media components; whether mass media component is combined with non-mass media components; group(s) targeted by intervention; whether intervention involves personal narratives; whether celebrities are included; whether it is a fictional portrayal of mental illness; type of message(s) in intervention (based on categories in [Clement 2010](#)); mental health condition(s) addressed; intervention providers (who designed the intervention, who funded it, who oversaw its delivery)

Details of control condition(s).

Details of co-interventions in all groups (non-mass media elements in interventions).

Delivery of intervention - stages, timing, frequency, duration (specifically and whether < 3 months or 3+ months), reach, recall, awareness.

Intervention quality and fidelity - whether intervention has a theoretical basis and details of theoretical basis; formative research undertaken in the development of intervention; evidence-base for intervention; whether intervention was delivered as intended; quality information assessed by study authors, others, review team.

Outcomes - primary and secondary outcome measures (as identified by study authors); any validation of outcome measures; methods of assessing outcomes (e.g. phone survey); methods of follow-up of non-respondents; timing of outcome assessment (frequency and duration); adverse events.

Notes - contact with authors; if study was translated; if a duplicate publication; and other information.

Results (numerical data) - effect estimates, standard errors (these may be calculated from other presented statistics) See also [Measures of treatment effect](#).

Data will be extracted independently by two authors. Disparities will be resolved through discussion, with arbitration with a third author where necessary. Review authors will not contribute to data extraction of any studies they have been involved in.

We will contact study authors for further information when data

relating to any of the fields in the data extraction table are missing.

Assessment of risk of bias in included studies

For RCTs we will use the Cochrane Collaboration's Risk of Bias tool (Higgins 2011, section 8.5). For ITS studies we will use the Cochrane Risk of Bias Tool for ITS studies adapted using EPOC's criteria for ITS studies and input from the CCCRG (Ryan 2011). The risk of bias will be independently assessed by two authors. Disparities will be resolved through discussion, with arbitration with a third author where necessary. Review authors will not contribute to risk of bias assessment for any studies they have been involved in. We will incorporate the results of the risk of bias assessment into the review through narrative description about each of the risk of bias items, leading to an overall assessment of the risk of bias in the included studies. Studies considered at high risk of bias will be removed as part of a sensitivity analysis.

Measures of treatment effect

Subject to data availability, for RCTs with continuous outcome measures we will report the mean differences with 95% CIs, and for dichotomous outcome measures we will calculate odds ratios with 95% CIs.

In cluster RCTs, when the cluster size, number of clusters and the intraclass correlation coefficient (or estimate equivalent) can be successfully obtained for a study, we will inflate the variances for clustering.

For ITS studies in which the risk of bias for all criteria is low, the study authors' results will be used. If any ITS study fails to meet this criterion, raw data will be requested for reanalysis using autoregressive interrupted moving average models (ARIMA) as suggested in Ramsay (Ramsay 2003) when there are a large number of time points; otherwise by using time series regression as suggested by Grilli (Grilli 2002). When ARIMA (autoregressive interrupted moving average) models are used, we will obtain both point estimates and change in slope estimates for each study, as both of these are important in the interpretation of the intervention effect. When time series regression is used, regression coefficients will be used to measure intervention effects. If meta analysis is appropriate (see Data synthesis) and studies have the same outcome measured by different scales, we will calculate standardised mean differences.

Unit of analysis issues

In cluster trials, where reported we will use effect estimates and standard errors that have been adjusted in the analysis for clustering, and combine the studies using the generic inverse-variance method. If the analysis does not take account of clustering then we will approximate the cluster adjusted effect size and standard error based on available data if the unadjusted effect estimate, the number or size of clusters and the intracluster correlation are provided.

If the intracluster correlation coefficient cannot be obtained then we will use an estimate from similar studies.

In cross-over trials, where reported we will use the effect estimate and standard deviation based on a paired t-test and combine the studies using the generic inverse-variance method (Higgins 2011, section 16.3). If studies have more than two groups we will combine all relevant experimental intervention groups of the study into a single group, and combine all relevant control intervention groups into a single control group (Higgins 2011, section 16.5.4).

Dealing with missing data

We will contact study authors where any data are missing. Where studies do not state that results are reported using an intention-to-treat analysis for primary outcomes, we will contact study authors to request data to enable us to conduct such an analysis, and in the event of non-response we will analyse results as reported.

When there are missing summary data in a study, we will contact authors and ask them to provide the required summary data, or failing that, any data to derive the required summary data. If authors are unable to provide this, we will attempt to derive the specific data from other reported statistics in the study. If we cannot obtain such data, the particular study will be analysed narratively.

Assessment of heterogeneity

Statistical measures of heterogeneity will be ascertained visually, and using the Cochrane's Q and the I^2 statistic, with $I^2 > 50\%$ representing substantial heterogeneity (Higgins 2011, section 9.5.2). We will also consider the clinical heterogeneity of the studies (for example in participants, interventions and outcomes) and methodological heterogeneity (such as in the quality of the studies, and in study design).

Assessment of reporting biases

Subject to their being at least ten studies and an appropriate range of sample sizes, we will assess the possibility of reporting bias using funnel plots to examine the relationship between studies' risk of bias and effect size estimates. This will be quantified using Egger's test of symmetry. If reporting bias is discovered the impact will be investigated in a sensitivity analysis.

Data synthesis

Whether a narrative synthesis or meta-analysis is conducted, we will produce Summary of Findings tables from the included studies for each type of study design (i.e. RCT and ITS) using GRADE-profiler (GRADEpro) software.

For RCTs, for each comparison (mass media intervention versus control) we will report tables of summary statistics for each of the included studies. For each primary and secondary outcome, we will report outcome measure, baseline and follow-up summary statistics, effect estimates and their statistical significance and our

assessment of risk of bias. For cluster randomised trials we will note whether there are unit of analysis issues. We will also report details concerning potential effect moderators (as specified under [Subgroup analysis and investigation of heterogeneity](#) e.g. nature of the intervention, content of the intervention, type of media). Following the approach outlined by Brennan ([Brennan 2009](#)), we will present results from ITS studies in tables for each comparison with summary statistics for each of the included studies, change in level of the outcome at the first point after the introduction of the intervention, post-intervention slope minus the pre-intervention slope, and information on effect modifiers. This will also be presented graphically using, for example, scatter plots of change in level versus change in slope with combinations of statistical significance denoted by different symbols.

In a narrative synthesis, for each comparison (e.g. mass media intervention versus control) we will state: the number of comparisons showing a positive direction of effect; the median effect size across all comparisons; the median effect size across comparisons without unit of analysis errors; and the number of comparisons showing statistically significant effects. This is the approach recommended by [Grimshaw 2003](#) as it “allows the reader to assess the likely effect size and consistency of effects across all included studies and whether these effects differ between studies, with and without unit of analysis errors”.

In the narrative synthesis and in any statistical synthesis we will synthesise first according to the different types of interventions (grouping similar interventions together), second according to the types of outcomes (with discrimination outcomes reported first, then prejudice outcomes, then secondary outcomes), and third according to the strength of evidence.

Preliminary scoping of the field indicates considerable heterogeneity in the types of intervention, participants and outcome measures, therefore it is unlikely that we will find sufficient homogeneity to warrant meta analysis. However a review author group meeting will be convened to judge the appropriateness of meta analysis in the light of the heterogeneity assessments. If meta analysis is appropriate we will use a random-effects model, as there is likely to be a high level of heterogeneity across the studies.

In the event of multiple outcomes reported in a study, the outcome selected for meta-analysis will be the primary outcome as defined by the authors of that particular study. If there is no specified primary outcome, or if a specific primary outcome cannot be deduced from the study, we will choose the outcome from which the power equation for the study was provided. In the case where this is not reported, we will choose the outcome which has the median reported effect size ([Grimshaw 2003](#)).

Subgroup analysis and investigation of heterogeneity

We will undertake the following subgroup analyses (by narrative methods and also by meta-analysis if appropriate) to explore possible explanations for observed heterogeneity:

- Short-term (up to three months) interventions versus long-term interventions (three months or longer),
- Studies in high-income countries (band A, World Bank Index) versus middle- /low-income (band B and C) countries.

We will conduct the following comparisons:

Comparisons relating to nature of the intervention:

- Interventions with one mass media component versus those with two or more mass media components,
- Interventions in which the mass media component(s) is combined with non-mass media components versus interventions with a mass media component only.

Comparisons relating to the content of the interventions:

- Interventions involving personal narratives (indirect 'social contact') versus those not involving personal narratives,
- Interventions with the primary message being biomedical, psychosocial, recovery-oriented, 'see the person', high prevalence of mental disorders, anti-dangerousness, valuing difference, social inclusion/human rights, continuum or negative impact of mental illness ([Clement 2010](#)),
- Interventions that include personal narratives by celebrities versus interventions that include personal narratives and include no celebrities,
- Interventions that include fictional narratives versus interventions with non-fictional narratives.

Comparisons relating to the type of media:

- Interventions using broadcast media (television, radio) versus print media versus cinema / recordings versus Internet / mobile phone versus other media.

Sensitivity analysis

We will conduct sensitivity analysis to examine the effects of excluding studies at higher risk of bias. If bias is discovered we will use two methods as a sensitivity analysis:

1. remove the less precise studies, and
2. use the 'trim and fill' method.

To test for small study effects of binary outcomes, we will perform the arcsine-Thompson test, as this has been shown to perform well in simulations and it allows for substantial between-study heterogeneity ([Rücker 2008](#)).

We will include a sensitivity check of a fixed-effect model. A sensitivity analysis for plausible variations in estimated intracluster correlation coefficients will be performed when unit of analysis errors arise in cluster randomised trials and the intracluster correlation coefficients have been estimated for these studies.

Stakeholder participation

One of the authors of the review uses mental health services, has experience of mental health stigma, and has close family members who have used mental health services, and draws on these perspectives in this review.

A consultation group has been set up to provide additional relevant perspectives. The role of the consultation group members is to comment and feedback on the draft protocol and draft review. Members of this group who have worked in anti-stigma campaigning / research will also be included in the request for additional studies that may meet the inclusion criteria at the search stage. The group includes the following members: a researcher from the Service User Research Enterprise, Institute of Psychiatry, Kings College London; the Deputy Director of Knowledge and Learning, Rethink (charity for people affected by severe mental illness); a medical doctor; an advertising executive; and the Service User Lead for an organisation working to reduce mental health stigma and discrimination, focusing particularly on employment. Three of these members are also stigma researchers. The lay summary will be written by the review author with experience of mental health service use in collaboration with a person who has used mental health services but who is not involved in

research.

In addition, the standard peer review process of the CCCRG includes review of the protocol and review by at least one consumer.

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* Indicates the major publication for the study

APPENDICES

Appendix I. MEDLINE search strategy

1. stereotyping/
2. (stereotyp* or stigma* or label* or negative image* or ignoran* or misconception* or misperception* or literacy or ((public* or community or social or popular) adj perception*)).tw.
3. social perception/
4. public opinion/
5. prejudice/
6. exp attitude/
7. ((public* or community or social or popular) adj attitude*).tw.
8. (((negative or positive or chang*) adj3 attitude*) or prejudice* or hostile* or intoleran*).tw.
9. social distance/
10. rejection psychology/
11. human rights/
12. (rights or discriminat* or marginali* or rejecting behavior or injustice* or (social adj (distance or justice or rejection or acceptance or exclusion or inclusion))).tw.
13. or/1-12
14. mental health/
15. mental health services/
16. exp mental disorders/
17. mentally ill persons/
18. ((mental* or psychiatr* or psychological* or developmental* or learning or substance*) adj (ill* or disorder* or disease* or distress* or disab* or problem* or health* or well-being or wellbeing or patient* or treatment or retardation)).tw.
19. ((chronic* or severe* or serious* or persistent) adj (mental* or psychiatr* or psychological*)).tw.
20. (emotional adj3 (disorder* or problem*)).tw.
21. (psychos#s or psychotic* or schizo* or depression or depressive or bipolar or mania or manic or obsessi* or panic or phobic or phobia or anorexi* or bulimi* or borderline or narcissis* or personality adj1 disorder or self injur* or self harm or dementia or substance abuse).tw.
22. or/14-21

24. exp mass media/
25. (mass communication or media or broadcast* or radio or television or cinema or film* or movie* or trailer* or journalis*).tw.
26. serial publications/
27. (newspaper* or magazin* or newsletter* or press).tw.
28. journalism/
29. publishing/
30. communications media/
31. telecommunications/
32. electronic mail/
33. (electronic mail* or email* or e-mail* or webmail* or mailing list* or discussion list* or listserv*).tw.
34. cellular phone/
35. (((mobile or cell* or wireless) adj (phone* or telephone*)) or text messag* or texting or texted or sms or mms).tw.
36. tape recording/
37. optical storage devices/
38. multimedia/
39. (audio* or video* or cassette* or tape* or dvd* or compact dis* or cd or cds or multimedia or multi media).tw.
40. internet/
41. (internet or web or website* or online or blog* or weblog* or podcast* or portal* or e-communication* or electronic communication* or computer program* or computer mediated).tw.
42. video games/
43. video recording/
- 44.(apps or facebook or twitter or tweet or bebo or youtube or myspace or chatroom or chatroom or viral message or viral advert or wiki* or virtual*).tw.
45. software/
46. hypermedia/
47. user computer interface/
48. computer assisted instruction/
49. books/
50. pamphlets/
51. (pamphlet* or booklet* or leaflet* or flyer* or brochure* or print* media or print* material* or publication*).tw.
52. publications/
53. government publications as topic/
54. information dissemination/
55. (information adj2 (distribut* or disseminat*).tw.
56. advertising as topic/
57. public relations/
58. persuasive communication/
59. famous persons/
60. ((famous adj (person* or people)) or celebrit*).tw.
61. social marketing/
62. (campaign* or message* or advert* or marketing or public relation* or publicity or public information or (communication adj (program* or strateg*)) or positive framing or (rais* adj2 awareness)).tw.
63. virtual or indirect or record* or film* or audio*) adj10 (social contact or testimony* or stor* or account* or experience* or narrative* or play or theat*)
64. Health promotion /
65. ((community or broadbased or broad based or public) adj3 education program*).tw.
66. (poster* or billboard* or ribbon* or button* or badge* or visual art* or street art* or (promotion* adj (item* or material*)) or festival* or entertainment).tw.
67. or/ 24-66
68. 13 and 23 and 67
69. randomized controlled trial.pt.
70. controlled clinical trial.pt.
71. random*.tw.

72. placebo*.tw.
73. trial.tw.
74. groups.ab.
75. evaluation studies.pt.
76. evaluat*.tw.
77. follow up studies/
78. prospective studies/
79. (experiment* or intervention*).tw.
80. (pre test or pretest or post test or posttest).tw.
81. (preintervention or postintervention).tw.
82. time series.tw.
83. time point*.tw.
84. or/69-83
85. exp animals/ not humans.sh.
86. 84 not 85
87. 68 and 86

HISTORY

Protocol first published: Issue 12, 2011

CONTRIBUTIONS OF AUTHORS

Sarah Clement wrote the protocol, with Paul Williams writing some sections and Sara Evans-Lacko co-writing some sections. All authors contributed ideas to the protocol and critically revised it.

Sarah Clement produced an initial draft search strategy which was developed further and finalised by John Kis-Rigo (CCCRG).

DECLARATIONS OF INTEREST

Review authors have been involved in some studies which may be eligible for inclusion in the review. GT leads the independent evaluation team for England's national 'Time to Change: Let's end mental health discrimination now' programme ([Henderson 2009](#)) and has received research funding for this. SEL is employed as a researcher on this evaluation team. GT has been a member of the independent evaluation team for Scotland's 'See Me' campaign ([Dunion 2005](#)) and received research funding for this. Both Time to Change and See Me are multifaceted initiatives with mass media components. GT is chief investigator and SC study lead for an RCT on the effectiveness of an anti-stigma DVD ([Clement in press](#)). GT received research funding for this study from the England's National Institute for Health Research and SC is employed on this study.

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This contributes to the time of GT.
- Big Lottery and Comic Relief grant for Evaluation of the Time to Change Programme, UK.
This supports the salary of SEL.